

From Heart to Muscle

Dr. Albert Szent-Györgyi, the famous Hungarian biochemist and Nobel Prize winner in medicine, won yet another honor last week. For his contributions in the field of cardiovascular diseases, first cause of death and disability in the United States, this remarkably productive researcher was given the Albert Lasker Award of the American Heart Association. He received a prize of \$1,000, a scroll describing his achievements which have led to a new understanding of the basic physiology of the heart, and a gold statuette of the Winged Victory of Samothrace.

Dr. Szent-Györgyi, now 60, was born in Budapest and educated at the University of Budapest and at Cambridge, England. While working in the Cambridge laboratories and later at the University of Szeged in Hungary, he isolated vitamin C, the antiscorbutic acid, which won for him the Nobel Prize in medicine in 1937. After that, he started to probe muscles, which make up most of the body tissue, to find out how they contract. In 1947, Szent-Györgyi fled the Communists and came to the United States. In a modest shop at the Marine Biological Laboratories, Woods Hole, Mass., he continued his study of the fundamentals of body chemistry. Results were spectacularly successful. Szent-Györgyi is credited with the isolation of actin, one of the two principal muscle proteins. The second, myosin, has been known for many years, but at Woods Hole the Hungarian scientist succeeded in refining the protein and establishing its function in muscle contraction. He also contributed to the isolation of ATP (adenosine triphosphate), which produces muscular contraction through its effect on the two proteins, actin and myosin. In Szent-Györgyi's opinion, ATP, one of the basic body chemicals, is "close to the center of life itself."

Purpose: These discoveries opened up new fields of great significance in the diagnosis and treatment of heart and blood-vessel diseases. For hypertension, the great killer, comes from a chronic constriction of the muscles of the tiny blood vessels, the arterioles.

The Woods Hole muscle research also promises to help solve the mysteries of muscular dystrophy, a now fatal ailment which scientists think is due to faulty nutrition of the muscles, causing them to degenerate until they are useless. Muscular Dystrophy Associations of America, Inc., a national organization, has turned over \$60,000 to Szent-Györgyi for research in this tragic disease. That work will take the scientist, for the first time, into study of the transmission of energy as a clue to muscular dystrophy.

Szent-Györgyi, a broad, stocky man with heavy white hair, prefers to follow

wide, deep, unspecified lines of endeavor, with no guarantee of success. Once he has set up a study, he turns it over to his assistants (six scientists and four technicians) and plunges into some new and solitary pursuit in the mysteries of organic life. Yet in discussing the scientific aspects of his work, from the beating of a monkey's heart to a new process for combining elements to produce a muscle contraction, he is articulate, witty, and highly convincing. His accent lends color, but never confusion, to a masterly command of the English language. As a

"pure" researcher, he follows strange paths with no apparent destination in mind. Yet in almost any field in which he chooses to work, he makes a practical and valuable contribution to medicine.



Szent-Györgyi: Lasker muscle man